

This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Minor, Industrial permit. The discharge results from the operation of a 12 MGD (production) water treatment plant. This permit action consists of updating the proposed effluent limits to reflect the current Virginia WQS (effective January 6, 2011) and updating permit language, as appropriate, to reflect current boilerplate. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9VAC25-260-00 et seq.

1. Facility Name and Mailing Address: Manassas WTP
8500 Public Works Drive
Manassas, VA 20110

Facility Location: 14329 Glenkirk Road
Nokesville, VA 20181

Facility Contact Name: Mr. Tony H. Dawood

SIC Code : 4941 WTP

County: Prince William

Telephone Number: (703) 257-8382
2. Permit No.: VA0050181

Other VPDES Permits associated with this facility: N/A

Other Permits associated with this facility: Air – Registration Number 73229
Petroleum - 3004990

E2/E3/E4 Status: E3
3. Owner Name: City of Manassas

Owner Contact/Title: Mr. Tony H. Dawood /
Deputy Director - Water and Sewer

Telephone Number: (703) 257-8382
4. Application Complete Date: November 4, 2010

Permit Drafted By: Susan Mackert
Date Drafted: February 8, 2011

Draft Permit Reviewed By: Alison Thompson
Date Reviewed: February 14, 2011

Draft Permit Reviewed By: Bryant Thomas
Date Reviewed: April 6, 2011

Public Comment Period : Start Date: March 8, 2011
End Date: April 6, 2011
5. Receiving Waters Information: See Attachment 1 for the Flow Frequency Determination

Receiving Stream Name : Broad Run
Stream Code: 1aBRU

Drainage Area at Outfall: 60 square miles
River Mile: 15.54

Stream Basin: Potomac
Subbasin: Potomac

Section: 7a
Stream Class: III

Special Standards: g
Waterbody ID: VAN-A19R

7Q10 Low Flow: 0 MGD
7Q10 High Flow: 0 MGD

1Q10 Low Flow: 0 MGD
1Q10 High Flow : 0 MGD

Harmonic Mean Flow: 0 MGD
30Q5 Flow: 0 MGD

303(d) Listed: Yes
30Q10 Flow: 0 MGD

TMDL Approved: Yes
Date TMDL Approved: November 15, 2006 (*E. coli*)
6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

| | |
|---|---|
| <u>✓</u> State Water Control Law <u>✓</u> Clean Water Act <u>✓</u> VPDES Permit Regulation <u>✓</u> EPA NPDES Regulation | <u>✓</u> EPA Guidelines <u>✓</u> Water Quality Standards <u>✓</u> Other: 9VAC25-860 |
|---|---|

7. Licensed Operator Requirements: N/A

8. Reliability Class: N/A

9. Permit Characterization:

| | | |
|---|--|---|
| <input type="checkbox"/> Private | <input type="checkbox"/> Effluent Limited | <input type="checkbox"/> Possible Interstate Effect |
| <input type="checkbox"/> Federal | <input checked="" type="checkbox"/> Water Quality Limited | <input type="checkbox"/> Compliance Schedule Required |
| <input type="checkbox"/> State | <input checked="" type="checkbox"/> Toxics Monitoring Program Required | <input type="checkbox"/> Interim Limits in Permit |
| <input checked="" type="checkbox"/> Municipal | <input type="checkbox"/> Pretreatment Program Required | <input type="checkbox"/> Interim Limits in Other Document |
| <input checked="" type="checkbox"/> TMDL | | |

10. Wastewater Sources and Treatment Description:Potable Water Production

The City of Manassas withdraws water from Lake Manassas as the raw water source for the Manassas Water Treatment Plant. The Virginia Department of Health permitted production for the water treatment plant is 12 Million Gallons per Day (MGD). Potable water is provided to residents of the City of Manassas, the City of Manassas Park, and western Prince William County.

Raw water is treated by the addition of ferric sulfate and sodium hypochlorite. The water is then split between the East side, West side, and pulsators. The treatment units on the East and West sides are conventional water treatment units with separate flocculation and sedimentation basins followed by filtration. There are two flocculation and sedimentation basins and four filters on each side. The pulsators are upflow clarifiers followed by filtration; there are four filters for the pulsators. Following filtration, the water is chlorinated for primary disinfection and stored in the clearwell prior to distribution. The water is then treated with caustic soda, fluoride, and sodium hexametaphosphate prior to distribution.

Wastewater Sources and Treatment

Settled solids (sludge) from the clarifiers are pumped to the sludge thickener and are ultimately transported to the Upper Occoquan Service Authority (VA0024988).

Wastewater is generated from the backwashing of filters, from pulsator blowdown, and from sedimentation basin cleaning. The filter backwash and pulsator blowdown flow directly to the surge tank for sedimentation. The solids from the sedimentation basins are first emptied into the thickener, and the clarified water is discharged to the surge tank. Discharge from the surge tank is conducted manually with the clarified water being mixed with sulfur dioxide for dechlorination prior to discharge to Broad Run.

Outfall 001

Discharge via Outfall 001 is intermittent in nature occurring three times a week for four hours at a time. The average discharge is approximately 0.349 MGD with a maximum of 1.0 MGD. Because the discharge from this outfall is comprised solely of industrial wastewater, quarterly visual examinations of storm water quality are not required.

Outfall 002

With this reissuance, Outfall 002 has been added to the permit and designated as an industrial wastewater discharge / comingled storm water overflow. Under typical conditions this outfall does not discharge. However, there are industrial processes within the drainage area of the outfall. Should there be an operational problem and/or failure within the drainage area industrial process water would flow to the retention pond. As such, there is reasonable potential for an industrial wastewater and/or comingled storm water discharge from the retention pond. Compliance sampling shall be conducted once per month in which there is a discharge from the retention pond. Because the discharge from this outfall is comprised of industrial wastewater and/or comingled storm water, quarterly visual examinations of storm water quality are not required.

Outfall 902

A discrete storm water discharge would only occur when the retention pond overflows due to a significant rain event. With this reissuance, Outfall 902 has been added to the permit and designated as an emergency storm water overflow. Compliance sampling shall be conducted once per discharge from the retention pond. Visual examinations of storm water quality shall be conducted once per discharge from the retention pond rather than quarterly.

See Attachment 2 for the NPDES Permit Rating Worksheet.

See Attachment 3 for a facility schematic/diagram.

TABLE 1 – Outfall Description

| Outfall Number | Discharge Sources | Treatment | Average Flow | Outfall Latitude and Longitude |
|---|--|--------------------|--------------|--------------------------------|
| 001 | Industrial Wastewater | See Item 10 above. | 0.349 MGD | 38° 45' 44? N 77° 37' 16? W |
| 002 | Industrial Wastewater / Comingled Storm Water | Sedimentation | No Discharge | 38° 45' 42? N 77° 37' 13? W |
| 902 | Storm Water | Sedimentation | No Discharge | 38° 45' 42? N 77° 37' 13? W |
| See Attachment 4 for (Gainesville Quad, DEQ #206D) topographic map. | | | | |

11. Sludge Treatment and Disposal Methods:

The industrial solids generated at this water treatment plant are allowed to settle in a thickener and are then transported to the Upper Occoquan Service Authority (VA0024988) in Centreville for final treatment and disposal.

12. Discharges, Intakes, Monitoring Stations, Other Items in Vicinity of Discharge:

The facilities and monitoring stations listed below either discharge to or are located within the waterbody VAN-A19R and discharge to Broad Run or an unnamed tributary to Broad Run. See Attachment 5 for a list of all other facilities and monitoring stations located within the waterbody VAN-A19R.

| TABLE 2 | |
|-------------|--|
| 1aBRU011.48 | DEQ monitoring station located at the Sudley Manor Drive bridge crossing (Broad Run) |
| VA0088510 | Prince William County – Balls Ford Road Yard Waste Composting Facility (Broad Run, UT) |
| VAG110111 | Ennstone Incorporated – Manassas (Broad Run, UT) |
| VAG110313 | Hanson Pipe and Precast Incorporated (Broad Run, UT) |
| VAG406038 | Eric J. Rubb Residence (Broad Run, UT) |
| VAG406071 | Judith D. Nossaman Residence (Broad Run, UT) |
| VAG406079 | Donnie E. Boggs Residence (Broad Run, UT) |
| VAG406231 | Carlos Franco Residence (Broad Run, UT) |
| VAG406234 | Jason Kuhlberg Residence (Broad Run, UT) |
| VAG406260 | Daniel W. Gooding Residence (Broad Run, UT) |
| VAG406308 | Allen T. Lindholm Property (Broad Run, UT) |
| VAG406313 | June M. Burke Residence (Broad Run, UT) |
| VAG406314 | Bull Run Mountains Conservancy, Incorporated (Broad Run) |
| VAG406316 | Barry and Beeren Residence (Broad Run, UT) |
| VAG406401 | Harlowe Residence (Broad Run, UT) |
| VAG406403 | Jose Hernandez Residence (Broad Run, UT) |
| VAG406473 | Raymond Gagnon Residence (Broad Run, UT) |
| VAG406476 | Buckland Market (Broad Run, UT) |
| VAG406478 | Andrew Talcott Residence (Broad Run, UT) |
| VAG406488 | Buckland Mill Road Residence (Broad Run, UT) |
| VAG406503 | Stephen Bashore Residence (Broad Run, UT) |
| VAR051085 | Quarles Petroleum – Manassas Bulk Plant (Broad Run, UT) |
| VAR051290 | Henry's Wrecker Service - Manassas (Broad Run, UT) |
| VAR051476 | Old Dominion Freight Line Incorporated - Bristow (Broad Run, UT) |
| VAR051639 | Potomac Disposal Services of Virginia, LLC (Broad Run) |
| VAR051886 | Virginia Railway Express – Broad Run Yard (Broad Run) |
| VAR051927 | Dulles Aviation Incorporated (Broad Run) |
| VAR051949 | Chemung Contracting Corporation (Broad Run, UT) |

13. Material Storage: Please see Attachment 6 for a complete list of significant materials stored and the associated best management practices in place.

14. Site Inspection: Performed by Susan Mackert on September 16, 2010. The site visit confirms that the application packages received on October 5, 2010, and November 2, 2010, are accurate and representative of actual site conditions. The site visit memo can be found as Attachment 7.

15. Receiving Stream Water Quality and Water Quality Standards:

a) Ambient Water Quality Data

The nearest Department of Environmental Quality ambient water quality monitoring station, 1aBRU011.48 on Broad Run, is located in segment VAN-A19R_BRU02A00 approximately four miles downstream from the location of Outfall 001. This segment begins at the confluence with Rocky Branch and continues downstream until the confluence with Cannon Branch. The receiving stream, Broad Run, is listed on the current 303(d) list.

The 2010 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report (IR) gives an impaired classification for the following:

- Recreation Use Impairment

VAN-A19R_BRU02A00: Sufficient excursions from the maximum *E. coli* bacteria criterion (8 of 24 samples – 33.3%) were recorded at DEQ's ambient water quality monitoring station (1aBRU011.48) at the Sudley Manor Road crossing to assess this stream segment as not supporting of the recreation use goal for the 2010 water quality assessment. The segment was previously listed for a fecal coliform bacteria impairment from 2002 through 2004. The *E. coli* bacteria impairment was first listed in 2006.

The following Total Maximum Daily Load (TMDL) has been established.

- Occoquan Streams Bacteria TMDL (*E. coli*) – Approved by EPA November 15, 2006

The bacteria TMDL for the Occoquan Streams considered all upstream facilities. Because this industrial facility is not expected to discharge the contaminant of concern (*E. coli*) it did not receive a WLA in the TMDL.

The complete planning statement is located within the permit reissuance file.

b) Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream, Broad Run, is located within Section 7a of the Potomac River Basin, and classified as a Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0-9.0 standard units (S.U.).

Attachment 8 details other water quality criteria applicable to the receiving stream.

Staff has re-evaluated receiving stream ambient monitoring data for pH, temperature, and hardness (expressed as mg/L calcium carbonate) and finds no significant differences from the data used during the last reissuance. Therefore, the previously established pH, temperature, and hardness values will be carried forward as part of this reissuance. Data comparison from DEQ's ambient water quality monitoring station 1ABRU007.58 on Broad Run are presented below.

| TABLE 3 – Ambient Monitoring Data Comparison | | |
|--|-----------------|-----------------|
| | 2006 Reissuance | 2011 Reissuance |
| pH | 7.8 S.U. | 8.0 S.U. |
| Temperature | 23.9°C | 24.5°C |
| Hardness | 76 mg/L | 80 mg/L |

Because no effluent data is available for temperature or hardness, staff had to utilize a default temperature value of 25°C and a default hardness value of 50 mg/L CaCO₃ for these parameters. The 90th percentile pH value of 7.14 S.U. was derived from reported effluent data from 2006 - 2010.

c) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Broad Run, is located within Section 7a of the Potomac River Basin. This section has been designated with a special standard of “g”.

Special Standard “g” refers to the Occoquan Watershed policy (9VAC25-410). The regulation sets stringent treatment and discharge requirements in order to improve and protect water quality, particularly since the waters are an important water supply for Northern Virginia. The regulation generally prohibits new STPs and only allows minor industrial discharges.

d) Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched on February 7, 2011, for records to determine if there are threatened or endangered species in the vicinity of the discharge. The following threatened or endangered species were identified within a 2 mile radius of the discharge from both Outfall 001 and Outfall 002: Brook Floater, Upland Sandpiper, Loggerhead Shrike, Henslow's Sparrow, Bald Eagle, and the Migrant Loggerhead Shrike. The limits proposed in this draft permit are protective of the Virginia Water Quality Standards and therefore, protect the threatened and endangered species found near the discharge locations.

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1 based on the stream having a 7Q10 and 1Q10 of zero. At times the stream is comprised of only effluent and storm water from this facility. Effluent limits were derived to meet the WQS. Permit limits proposed have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLA) are calculated. In this case since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLA's are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a) Effluent Screening:

Effluent data obtained from the Discharge Monitoring Reports (DMR) and permit application has been reviewed and determined to be suitable for evaluation. There have been no exceedances of the established limitations.

The following pollutants require a wasteload allocation analysis: Total Residual Chlorine.

b) Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f)(Q_s)] - [(C_s)(f)(Q_s)]}{Q_e}$$

| | | | |
|--------|----------------|---|---|
| Where: | WLA | = | Wasteload allocation |
| | C _o | = | In-stream water quality criteria |
| | Q _e | = | Design flow |
| | Q _s | = | Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; harmonic mean for carcinogen-human health criteria; 30Q10 for ammonia criteria, and 30Q5 for non-carcinogen human health criteria) |
| | f | = | Decimal fraction of critical flow |
| | C _s | = | Mean background concentration of parameter in the receiving stream. |

The water segment receiving the discharge via Outfall 001 is considered to have a 7Q10 and 1Q10 of 0.0 MGD. As such, there is no mixing zone and the WLA is equal to the C_o.

c) Effluent Limitations Toxic Pollutants, Outfall 001 and Outfall 002

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D. requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Total Residual Chlorine:

Chlorine is used in the production process and is potentially in the discharge. Staff calculated WLAs for TRC using current critical flows. In accordance with current DEQ guidance, staff used a default data point of 0.2 mg/L and the calculated WLAs to derive limits. The calculated limitations generated a monthly average and a daily maximum of 0.016 mg/L (see Attachment 8).

However, the *VPDES General Permit for Potable Water Treatment Plants*, 9VAC25-860, has set a monthly average and daily maximum of 0.011 mg/L for TRC. Since these limitations are more stringent, a monthly average and daily maximum TRC limitation of 0.011 mg/L is proposed for this reissuance for both Outfall 001 and Outfall 002.

Outfall 001

A monitoring frequency of once per quarter (1/3M) is proposed to continue with this reissuance based on the compliance history with the effluent limitations. This monitoring frequency is in accordance with 9VAC25-860 et seq. which also allows for quarterly sampling.

Outfall 002

Because Outfall 002 is a new outfall location with this reissuance and it is also considered an intermittent discharge, a monitoring frequency of once per month in which a discharge occurs (1/M) is proposed with this reissuance. This monitoring frequency meets the intent of the requirements found within 9VAC25-860 et seq.

2) Tributyltin:

During the previous reissuance of the permit, Appendix A monitoring indicated an unusual occurrence of Tributyltin in the discharge from Outfall 001. A monitoring program was implemented to compile additional data to assist in a later determination of whether a Tributyltin limit was warranted. Based on DMR monitoring data submitted from 2006 – 2010, it is staff's best professional judgement that a Tributyltin limit is not warranted and that monitoring is no longer necessary with this reissuance. Please see Attachment 8 for DMR data.

d) Effluent Limitations and Monitoring - Conventional and Non-Conventional Pollutants, Outfall 001 and Outfall 002

1) Total Suspended Solids:

The *VPDES General Permit for Potable Water Treatment Plants*, 9VAC25-860, has set a monthly average limitation of 30 mg/L and a daily maximum limitation of 60 mg/L for TSS.

Outfall 001

No changes to the Total Suspended Solids (TSS) limitations are proposed. The monthly average limitation of 30 mg/L and the daily maximum limitation of 60 mg/L are proposed to continue with this reissuance. These limits are based on staff's best professional judgement and are also in accordance with 9VAC25-860-10 et seq.

A monitoring frequency of once per quarter (1/3M) is proposed to continue with this reissuance based on the compliance history with the effluent limitations.

Outfall 002

A monthly average of 30 mg/L and a daily maximum of 60 mg/L for TSS are proposed for reissuance.

Because Outfall 002 is a new outfall location with this reissuance and it is also considered an intermittent discharge, a monitoring frequency of once per month in which a discharge occurs (1/M) is proposed with this reissuance. This monitoring frequency meets the intent of the requirements found within 9VAC25-860 et seq.

2) pH:

Limitations for pH are set at the water quality criteria.

Outfall 001

No changes to pH limitations are proposed. These limits are in accordance with 9VAC25-860-10 et seq.

A monitoring frequency of once per quarter (1/3M) is proposed to continue with this reissuance.

Outfall 002

Because Outfall 002 is a new outfall location with this reissuance and it is also considered an intermittent discharge, a monitoring frequency of once per month in which a discharge occurs (1/M) is proposed with this reissuance. This monitoring frequency meets the intent of the requirements found within 9VAC25-860 et seq.

e) Effluent Limitations, Outfall 902 – Storm Water Only Pollutants.

VA-DEQ Guidance Memo 96-001 recommends that chemical water quality-based limits not be placed on storm water outfalls at this time because the methodology for developing limits and the proper method of sampling is still a concern and under review/reevaluation by EPA. Exceptions would be where a VPDES permit for a storm water discharge has been issued that includes effluent limitations (backsliding must be considered before these limitations can be modified) and where there are reliable data, obtained using sound, scientifically defensible procedures, which provide the justification and defense for an effluent limitation.

With this reissuance, Outfall 902 has been designated as an emergency storm water overflow with compliance sampling to be conducted once per discharge from the retention pond for the following parameters: TSS, TRC, pH, and flow. Visual examinations of storm water quality shall be conducted once per discharge from the retention pond rather than quarterly.

f) Effluent Limitations and Monitoring Summary.

The effluent limitations and monitoring requirements are presented in the following table. Limits were established for Total Suspended Solids, pH, and Total Residual Chlorine.

The limits for Total Suspended Solids and Total Residual Chlorine are based 9VAC25-860-10 et seq.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual, and 9VAC25-860-10 et seq.

18. Antibacksliding:

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance

19a. Effluent Limitations/Monitoring Requirements: Outfall 001 (Industrial Wastewater Discharge)

Average flow is 0.349 MGD

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

| PARAMETER | BASIS FOR LIMITS | DISCHARGE LIMITATIONS | | | | MONITORING REQUIREMENTS | |
|--|------------------|------------------------|----------------------|----------------|----------------|-------------------------|--------------------|
| | | <u>Monthly Average</u> | <u>Daily Maximum</u> | <u>Minimum</u> | <u>Maximum</u> | <u>Frequency</u> | <u>Sample Type</u> |
| Flow (MGD) | NA | NL | NA | NA | NL | 1/3M ^a | Estimate |
| pH | 2 | NA | NA | 6.0 S.U. | 9.0 S.U. | 1/3M ^a | Grab |
| Total Suspended Solids (TSS) | 1,3 | 30 mg/L | 60 mg/L | NA | NA | 1/3M ^a | 5G/8H-C |
| Total Residual Chlorine | 2,3 | 0.011 mg/L | 0.011 mg/L | NA | NA | 1/3M ^a | Grab |
| Acute Toxicity – <i>C. dubia</i> (TU _d) | NA | NA | NA | NA | NL | 1/YR ^b | 5G/8H-C |
| Acute Toxicity – <i>P. promelas</i> (TU _a) | NA | NA | NA | NA | NL | 1/YR ^b | 5G/8H-C |

The basis for the limitations codes are:

MGD = Million gallons per day.*1/3M* = Once every three months.

1. Best Professional Judgement

NA = Not applicable.*1/YR* = Once every year.

2. Water Quality Standards

NL = No limit; monitor and report.

3. 9VAC25-860 (VPDES General Permit for Potable Water Treatment Plants)

S.U. = Standard units.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

5G/8H-C = 5 Grab/Eight Hour Composite - Consisting of five (5) grab samples collected at hourly intervals until the discharge ceases or five (5) grab samples taken at equal time intervals for the duration of the discharge if the discharge is less than eight (8) hours in length.

a. The quarterly monitoring periods shall be January 1 - March 31, April 1 - June 30, July 1 - September 30 and October 1 - December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

b. The annual monitoring period shall be January 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (January 10).

19b. Effluent Limitations/Monitoring Requirements: Outfall 002 (Industrial Wastewater / Comingled Storm Water Overflow)

Average flow is variable.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

| PARAMETER | BASIS FOR LIMITS | DISCHARGE LIMITATIONS | | | | MONITORING REQUIREMENTS | |
|------------------------------|------------------|-----------------------|---------------|----------|----------|-------------------------|-------------|
| | | Monthly Average | Daily Maximum | Minimum | Maximum | Frequency | Sample Type |
| Flow (MGD) | NA | NL | NA | NA | NL | 1/M | Estimate |
| pH | 2 | NA | NA | 6.0 S.U. | 9.0 S.U. | 1/M | Grab |
| Total Suspended Solids (TSS) | 1,3 | 30 mg/L | 60 mg/L | NA | NA | 1/M | Grab |
| Total Residual Chlorine | 2,3 | 0.011 mg/L | 0.011 mg/L | NA | NA | 1/M | Grab |

The basis for the limitations codes are:

- Best Professional Judgement *MGD* = Million gallons per day. *1/M* = Once every month in which a discharge occurs.
- Water Quality Standards *NA* = Not applicable.
- 9VAC25-860 (VPDES General Permit for Potable Water Treatment Plants) *NL* = No limit; monitor and report.
S.U. = Standard units.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

5G/8H-C = 5 Grab/Eight Hour Composite - Consisting of five (5) grab samples collected at hourly intervals until the discharge ceases or five (5) grab samples taken at equal time intervals for the duration of the discharge if the discharge is less than eight (8) hours in length.

19c. Effluent Limitations/Monitoring Requirements: Outfall 902 (Emergency Storm Water Overflow)

Average flow is variable.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

| PARAMETER | BASIS FOR LIMITS | DISCHARGE LIMITATIONS | | | | MONITORING REQUIREMENTS | |
|------------------------------|------------------|-----------------------|---------------|---------|---------|-------------------------|-------------|
| | | Monthly Average | Daily Maximum | Minimum | Maximum | Frequency | Sample Type |
| Flow (MGD) | NA | NL | NA | NA | NL | 1/Dis | Estimate |
| pH | 1 | NA | NA | NL | NL | 1/Dis | Grab |
| Total Suspended Solids (TSS) | 1 | NA | NA | NA | NL | 1/Dis | Grab |
| Total Residual Chlorine | 1 | NA | NA | NA | NL | 1/Dis | Grab |

The basis for the limitations codes are:

- Best Professional Judgement *MGD* = Million gallons per day. *1/Dis* = Once per discharge.
NA = Not applicable.
NL = No limit; monitor and report.
S.U. = Standard units.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

20. Other Permit Requirements :

- a) Part I.B. of the permit contains quantification levels and compliance reporting instructions.

9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

- b) Permit Section Part I.C., details the requirements for Toxics Management Program.

The VPDES Permit Regulation at 9VAC25-31-210 requires monitoring and 9VAC25-31-220.I, requires limitations in the permit to provide for and assure compliance with all applicable requirements of the State Water Control Law and the Clean Water Act. A TMP is imposed for municipal facilities with a design rate >1.0 MGD, with an approved pretreatment program or required to develop a pretreatment program, or those determined by the Board based on effluent variability, compliance history, IWC, and receiving stream characteristics.

The Manassas Water Treatment Plant is an industrial discharger with an effluent that may be potentially toxic. It is staff's best professional judgement that the permittee continue to conduct annual acute testing during this permit term using *C. dubia* and *P. promelas* as the test species.

- c) Permit Section Part I.D. details the requirements of a Storm Water Management Plan.

9VAC25-31-10 defines discharges of storm water from municipal treatment plants with design flow of 1.0 MGD or more, or plants with approved pretreatment programs, or discharges of storm water associated with industrial activity. 9VAC25-31-120 requires a permit for these discharges. The Pollution Prevention Plan requirements are derived from the VPDES general permit for discharges of storm water associated with industrial activity, 9VAC25-151-10 et seq.

21. Other Special Conditions :

- a) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190.E. The permittee shall submit for approval an Operations and Maintenance (O&M) Manual or a statement confirming the accuracy and completeness of the current O&M Manual to the Department of Environmental Quality, Northern Regional Office (DEQ-NRO) no later than July 7, 2011. Future changes to the facility must be addressed by the submittal of a revised O&M Manual within 90 days of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.
- b) Water Quality Criteria Reopener. The VPDES Permit Regulation at 9VAC25-31-220 D. requires establishment of effluent limitations to ensure attainment/maintenance of receiving stream water quality criteria. Should effluent monitoring indicate the need for any water quality-based limitations, this permit may be modified or alternatively revoked and reissued to incorporate appropriate limitations.
- c) Water Quality Criteria Monitoring. State Water Control Law §62.1-44.21 authorizes the Board to request information needed to determine the discharge's impact on State waters. States are required to review data on discharges to identify actual or potential toxicity problems, or the attainment of water quality goals, according to 40 CFR Part 131, Water Quality Standards, subpart 131.11. To ensure that water quality criteria are maintained, the permittee is required to analyze the facility's effluent resulting from a discharge from Outfall 002 for the substances noted in Attachment A of this VPDES permit. The data shall be submitted with the next application for reissuance, which is due at least 180 days prior to the expiration date of this permit.

- d) Notification Levels. The permittee shall notify the Department as soon as they know or have reason to believe:
- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:
 - (1) One hundred micrograms per liter;
 - (2) Two hundred micrograms per liter for acrolein and acrylonitrile; five hundred micrograms per liter for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter for antimony;
 - (3) Five times the maximum concentration value reported for that pollutant in the permit application; or
 - (4) The level established by the Board.
 - b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:
 - (1) Five hundred micrograms per liter;
 - (2) One milligram per liter for antimony;
 - (3) Ten times the maximum concentration value reported for that pollutant in the permit application; or
 - (4) The level established by the Board.
- e) Materials Handling/Storage. 9VAC25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia §62.1-44.16 and §62.1-44.17 authorize the Board to regulate the discharge of industrial waste or other waste.

Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

23. Changes to the Permit from the Previously Issued Permit:

- a) Special Conditions:
 - 1. The tributyltin special condition was removed from the permit as monitoring is no longer warranted.
 - 2. The water quality criteria monitoring special condition was revised to reflect monitoring of Outfall 002 should a discharge take place during the term of the permit.
- b) Monitoring and Effluent Limitations:
 - 1. The monthly average TRC limitation of 0.016 mg/L and the daily maximum TRC limitation of 0.016 mg/L have both been revised to 0.011 mg/L in accordance with 9VAC25-860.
 - 2. Outfall 002 has been added to the permit with this reissuance.
 - 3. Monitoring and effluent limitations have been added to the permit for Outfall 002.
 - 4. Outfall 902 has been added to the permit with this reissuance.
 - 5. Monitoring has been added to the permit for Outfall 902.

24. Variances/Alternate Limits or Conditions: N/A

25. Public Notice Information:

First Public Notice Date: March 7, 2011

Second Public Notice Date: March 14, 2011

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3853, susan.mackert@deq.virginia.gov. See Attachment 9 for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

26. 303 (d) Listed Stream Segments and Total Max. Daily Loads (TMDL):

The receiving stream, Broad Run, is listed on the current 303(d) list. The 2010 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report (IR) gives an impaired classification for the following segment: VAN-A19R_BRU02A00. The Occoquan Streams Bacteria TMDL (*E. coli*) was approved by EPA November 15, 2006. The bacteria TMDL for the Occoquan Streams considered all upstream facilities. Because the Manassas Water Treatment Plant was not expected to discharge the contaminant of concern (*E. coli*) it did not receive a WLA in the TMDL.

TMDL Reopener: This special condition is to allow the permit to reopened if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.

27. Additional Comments:

Previous Board Action(s): None

Staff Comments: The facility has requested a reduction in toxicity monitoring from once per year to once every five years. The Manassas Water Treatment Plant is an industrial discharger with an effluent that may be potentially toxic. It is staff's best professional judgement that the permittee continue to conduct annual acute testing during this permit term using *C. dubia* and *P. promelas* as the test species.

Public Comment: No comments were received during the public notice.

EPA Checklist: The checklist can be found in Attachment 10.

Fact Sheet Attachments – Table of Contents

Manassas Water Treatment Plant VA0050181

2011 Reissuance

| | |
|---------------|--|
| Attachment 1 | Flow Frequency Determination |
| Attachment 2 | NPDES Permit Rating Worksheet |
| Attachment 3 | Facility Flow Diagram |
| Attachment 4 | Topographic Map |
| Attachment 5 | Waterbody Discharges |
| Attachment 6 | Material Storage |
| Attachment 7 | Site Visit Memorandum |
| Attachment 8 | Wasteload Allocation Analysis – Limit Derivation |
| Attachment 9 | Public Notice |
| Attachment 10 | EPA Checklist |

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Office of Water Quality Assessments

629 East Main Street P.O. Box 10009 Richmond, Virginia 23219

SUBJECT: Flow Frequency Determination
Manassas WTP - #VA0050181

TO: Cathy K. Malast, NRO

FROM: Paul E. Herman, P.E., WQAP

DATE: April 26, 2000

COPIES: Ron Gregory, Charles Martin, File

RECEIVED
APR 27 2000

Northern VA. Region
Dept. of Env. Quality

This memo supersedes my April 20, 1995, memo to April Young concerning the subject VPDES permit.

The Manassas WTP discharges to the Broad Run near Gainesville, VA. Stream flow frequencies are required at this site for use by the permit writer in developing effluent limitations for the VPDES permit.

The VDEQ operated a continuous record gage on Broad Run at Buckland, VA (#01656500) from 1951 to 1986. The gage was located approximately 3.0 miles upstream of the discharge point at the U.S. Route 29 bridge in Prince William County. The flow frequencies for the gage and the discharge point are presented below. The values at the discharge point were determined by drainage area proportions and have been reduced by the volume of the Manassas WTP withdrawal from Lake Manassas. Adjustments have not been made for any minimum release requirements from the dam or for other upstream discharges, withdrawals, or springs.

Broad Run at Buckland, VA (#01656500):

Drainage Area = 50.5 mi²

1Q10 = 0.68 cfs

High Flow 1Q10 = 5.0 cfs

7Q10 = 0.87 cfs

High Flow 7Q10 = 7.1 cfs

30Q5 = 2.1 cfs

HM = 9.4 cfs

The high flow months are December through April. The maximum withdrawal by the Manassas WTP from Lake Manassas during the high flow period occurred during April 1997, and equaled 225.553 million gallons (11.63 cfs). The maximum withdrawal during the low flow period occurred during August 1998, and equaled 312.356 million gallons (15.59 cfs). The flow frequencies for Broad Run at the Manassas WTP discharge point have been reduced by these withdrawal volumes.

Broad Run at Manassas WTP discharge point:

Drainage Area = 60 mi²

1Q10 = 0.81 cfs - 15.59 cfs = 0.0 cfs

7Q10 = 1.0 cfs - 15.59 cfs = 0.0 cfs

30Q5 = 2.5 cfs - 15.59 cfs = 0.0 cfs

High Flow 1Q10 = 5.9 cfs - 11.63 cfs = 0.0 cfs

High Flow 7Q10 = 8.4 cfs - 11.63 cfs = 0.0 cfs

HM = 11.2 cfs - 15.59 cfs = 0.0 cfs

If you have any questions concerning this analysis, please let me know.

NPDES PERMIT RATING WORK SHEET

VPDES NO. : VA0050181

- ☒ Regular Addition
☐ Discretionary Addition
☐ Score change, but no status Change
☐ Deletion

Facility Name: Manassas WTP

City / County: City of Manassas / Prince William County

Receiving Water: Broad Run

Waterbody ID: VAN-A19R

Is this facility a steam electric power plant (sic =4911) with one or more of the following characteristics?

1. Power output 500 MW or greater (not using a cooling pond/lake)

2. A nuclear power Plant

3. Cooling water discharge greater than 25% of the receiving stream's 7Q10 flow rate

Is this permit for a municipal separate storm sewer serving a population greater than 100,000?

☐ YES; score is 700 (stop here)☒ NO; (continue)☐ Yes; score is 600 (stop here) ☒ NO; (continue)**FACTOR 1: Toxic Pollutant Potential**

PCS SIC Code: _____ Primary Sic Code: 4941 Other Sic Codes: _____

Industrial Subcategory Code: 000 (Code 000 if no subcategory)

Determine the Toxicity potential from Appendix A. Be sure to use the TOTAL toxicity potential column and check one)

| Toxicity Group | Code | Points | Toxicity Group | Code | Points | Toxicity Group | Code | Points |
|---|------|--------|-----------------------------|------|--------|--|------|--------|
| <input type="checkbox"/> No process waste streams | 0 | 0 | <input type="checkbox"/> 3. | 3 | 15 | <input checked="" type="checkbox"/> 7. | 7 | 35 |
| <input type="checkbox"/> 1. | 1 | 5 | <input type="checkbox"/> 4. | 4 | 20 | <input type="checkbox"/> 8. | 8 | 40 |
| <input type="checkbox"/> 2. | 2 | 10 | <input type="checkbox"/> 5. | 5 | 25 | <input type="checkbox"/> 9. | 9 | 45 |
| | | | <input type="checkbox"/> 6. | 6 | 30 | <input type="checkbox"/> 10. | 10 | 50 |

Code Number Checked: 7

Total Points Factor 1: 35**FACTOR 2: Flow/Stream Flow Volume** (Complete either Section A or Section B; check only one)

Section A – Wastewater Flow Only considered

| Wastewater Type (see Instructions) | Code | Points |
|---------------------------------------|--|--------|
| Type I: Flow < 5 MGD | <input type="checkbox"/> 11 | 0 |
| Flow 5 to 10 MGD | <input type="checkbox"/> 12 | 10 |
| Flow > 10 to 50 MGD | <input type="checkbox"/> 13 | 20 |
| Flow > 50 MGD | <input type="checkbox"/> 14 | 30 |
| Type II: Flow < 1 MGD | <input type="checkbox"/> 21 | 10 |
| Flow 1 to 5 MGD | <input type="checkbox"/> 22 | 20 |
| Flow > 5 to 10 MGD | <input type="checkbox"/> 23 | 30 |
| Flow > 10 MGD | <input type="checkbox"/> 24 | 50 |
| Type III: Flow < 1 MGD | <input checked="" type="checkbox"/> 31 | 0 |
| Flow 1 to 5 MGD | <input type="checkbox"/> 32 | 10 |
| Flow > 5 to 10 MGD | <input type="checkbox"/> 33 | 20 |
| Flow > 10 MGD | <input type="checkbox"/> 34 | 30 |

Section B – Wastewater and Stream Flow Considered

| Wastewater Type (see Instructions) | Percent of Instream Wastewater Concentration at Receiving Stream Low Flow | Code | Points |
|---------------------------------------|--|-----------------------------|--------|
| Type I/III: | < 10 % | <input type="checkbox"/> 41 | 0 |
| | 10 % to < 50 % | <input type="checkbox"/> 42 | 10 |
| | > 50% | <input type="checkbox"/> 43 | 20 |
| Type II: | < 10 % | <input type="checkbox"/> 51 | 0 |
| | 10 % to < 50 % | <input type="checkbox"/> 52 | 20 |
| | > 50 % | <input type="checkbox"/> 53 | 30 |

Code Checked from Section A or B: 31

Total Points Factor 2: 0

NPDES PERMIT RATING WORK SHEET

FACTOR 3: Conventional Pollutants

(only when limited by the permit)

A. Oxygen Demanding Pollutants: (check one) ☐ BOD ☐ COD ☐ Other: _____

Permit Limits: (check one)

| | | Code | Points |
|--------------------------|------------------------|------|--------|
| <input type="checkbox"/> | < 100 lbs/day | 1 | 0 |
| <input type="checkbox"/> | 100 to 1000 lbs/day | 2 | 5 |
| <input type="checkbox"/> | > 1000 to 3000 lbs/day | 3 | 15 |
| <input type="checkbox"/> | > 3000 lbs/day | 4 | 20 |

Code Number Checked: NA**Points Scored:** 0

B. Total Suspended Solids (TSS)

Permit Limits: (check one)

| | | Code | Points |
|-------------------------------------|------------------------|------|--------|
| <input checked="" type="checkbox"/> | < 100 lbs/day | 1 | 0 |
| <input type="checkbox"/> | 100 to 1000 lbs/day | 2 | 5 |
| <input type="checkbox"/> | > 1000 to 5000 lbs/day | 3 | 15 |
| <input type="checkbox"/> | > 5000 lbs/day | 4 | 20 |

Code Number Checked: 1**Points Scored:** 0C. Nitrogen Pollutants: (check one) ☐ Ammonia ☐ Other: _____

Permit Limits: (check one)

| | Nitrogen Equivalent | Code | Points |
|--------------------------|------------------------|------|--------|
| <input type="checkbox"/> | < 300 lbs/day | 1 | 0 |
| <input type="checkbox"/> | 300 to 1000 lbs/day | 2 | 5 |
| <input type="checkbox"/> | > 1000 to 3000 lbs/day | 3 | 15 |
| <input type="checkbox"/> | > 3000 lbs/day | 4 | 20 |

Code Number Checked: NA**Points Scored:** 0**Total Points Factor 3:** 0**FACTOR 4: Public Health Impact**

Is there a public drinking water supply located within 50 miles downstream of the effluent discharge (this include any body of water to which the receiving water is a tributary)? A public drinking water supply may include infiltration galleries, or other methods of conveyance that ultimately get water from the above reference supply.

☒ YES; (If yes, check toxicity potential number below)☐ NO; (If no, go to Factor 5)

Determine the *Human Health* potential from Appendix A. Use the same SIC doe and subcategory reference as in Factor 1. (Be sure to use the *Human Health* toxicity group column – check one below)

| Toxicity Group | Code | Points | Toxicity Group | Code | Points | Toxicity Group | Code | Points |
|---|------|--------|-----------------------------|------|--------|--|------|--------|
| <input type="checkbox"/> No process waste streams | 0 | 0 | <input type="checkbox"/> 3. | 3 | 0 | <input checked="" type="checkbox"/> 7. | 7 | 15 |
| <input type="checkbox"/> 1. | 1 | 0 | <input type="checkbox"/> 4. | 4 | 0 | <input type="checkbox"/> 8. | 8 | 20 |
| <input type="checkbox"/> 2. | 2 | 0 | <input type="checkbox"/> 5. | 5 | 5 | <input type="checkbox"/> 9. | 9 | 25 |
| | | | <input type="checkbox"/> 6. | 6 | 10 | <input type="checkbox"/> 10. | 10 | 30 |

Code Number Checked: 7**Total Points Factor 4:** 15

NPDES PERMIT RATING WORK SHEET

FACTOR 5: Water Quality Factors

- A. *Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-base federal effluent guidelines, or technology-base state effluent guidelines), or has a wasteload allocation been to the discharge*

| | Code | Points |
|---|------|--------|
| <input checked="" type="checkbox"/> YES | 1 | 10 |
| <input type="checkbox"/> NO | 2 | 0 |

- B. *Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?*

| | Code | Points |
|---|------|--------|
| <input checked="" type="checkbox"/> YES | 1 | 0 |
| <input type="checkbox"/> NO | 2 | 5 |

- C. *Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?*

| | Code | Points |
|--|------|--------|
| <input type="checkbox"/> YES | 1 | 10 |
| <input checked="" type="checkbox"/> NO | 2 | 0 |

Code Number Checked: A 1 B 1 C 1
Points Factor 5: A 10 + B 0 + C 0 = 10

FACTOR 6: Proximity to Near Coastal Waters

- A. Base Score: Enter flow code here (from factor 2) 31

Check appropriate facility HPRI code (from PCS):

| HPRI# | Code | HPRI Score |
|---------------------------------------|------|------------|
| <input type="checkbox"/> 1 | 1 | 20 |
| <input type="checkbox"/> 2 | 2 | 0 |
| <input type="checkbox"/> 3 | 3 | 30 |
| <input checked="" type="checkbox"/> 4 | 4 | 0 |
| <input type="checkbox"/> 5 | 5 | 20 |

HPRI code checked : 4

Base Score (HPRI Score): 0 X (Multiplication Factor) 0.0 = 0

Enter the multiplication factor that corresponds to the flow code: 0.0

| Flow Code | Multiplication Factor |
|---------------|-----------------------|
| 11, 31, or 41 | 0.00 |
| 12, 32, or 42 | 0.05 |
| 13, 33, or 43 | 0.10 |
| 14 or 34 | 0.15 |
| 21 or 51 | 0.10 |
| 22 or 52 | 0.30 |
| 23 or 53 | 0.60 |
| 24 | 1.00 |

- B. Additional Points – NEP Program

For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay?

| Code | Points |
|---------------------------------------|--------|
| <input type="checkbox"/> 1 | 10 |
| <input checked="" type="checkbox"/> 2 | 0 |

- C. Additional Points – Great Lakes Area of Concern

For a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 area's of concern (see instructions)?

| Code | Points |
|---------------------------------------|--------|
| <input type="checkbox"/> 1 | 10 |
| <input checked="" type="checkbox"/> 2 | 0 |

Code Number Checked: A 4 B 2 C 2
Points Factor 6: A 0 + B 0 + C 0 = 0

NPDES PERMIT RATING WORK SHEET

SCORE SUMMARY

| <u>Factor</u> | <u>Description</u> | <u>Total Points</u> |
|-----------------------------|----------------------------------|---------------------|
| 1 | Toxic Pollutant Potential | 35 |
| 2 | Flows / Streamflow Volume | 0 |
| 3 | Conventional Pollutants | 0 |
| 4 | Public Health Impacts | 15 |
| 5 | Water Quality Factors | 10 |
| 6 | Proximity to Near Coastal Waters | 0 |
| TOTAL (Factors 1 through 6) | | 60 |

S1. Is the total score equal to or greater than 80 ☐ YES; (Facility is a Major) ☒ NO

S2. If the answer to the above questions is no, would you like this facility to be discretionary major?

☒ NO

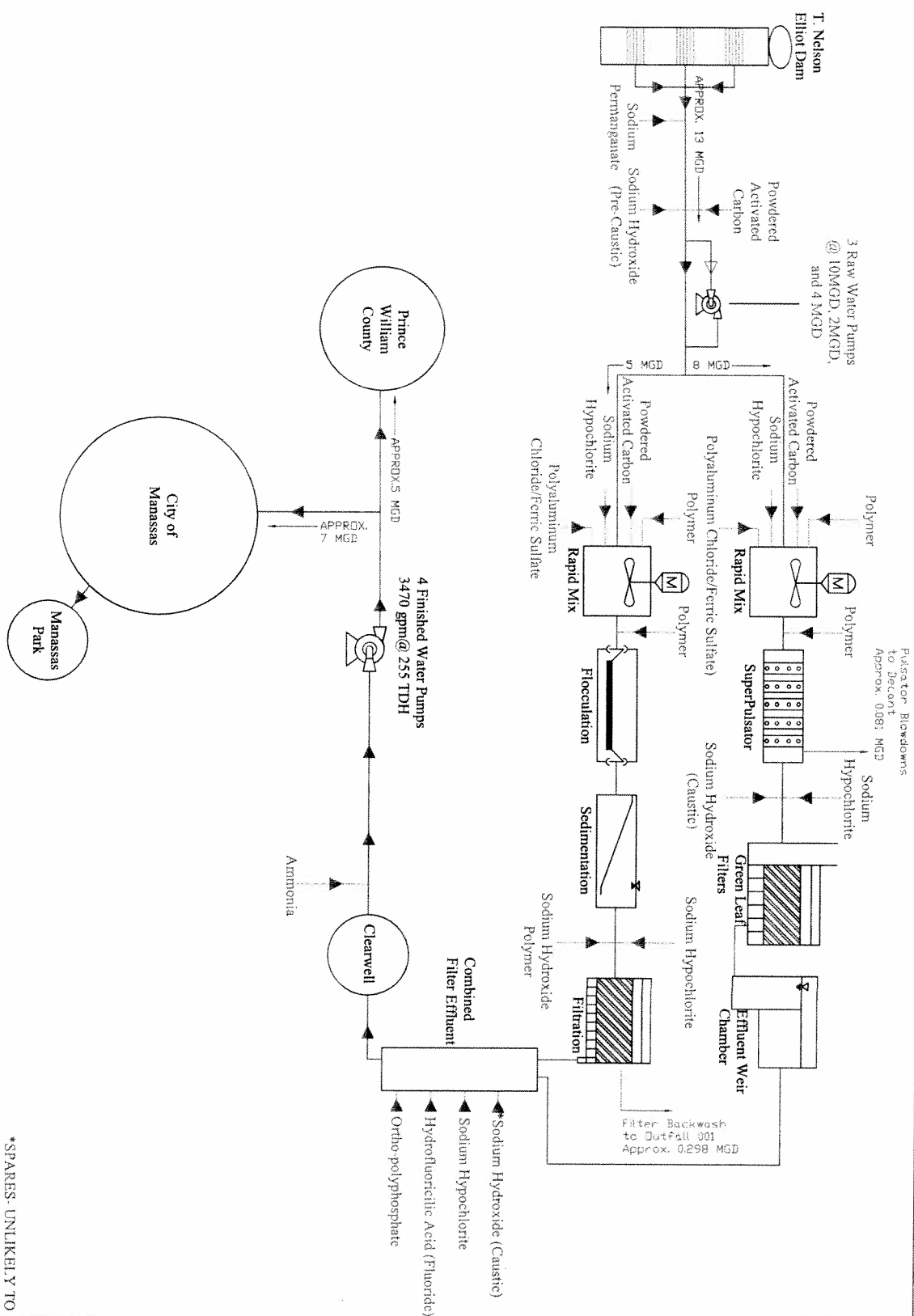
☐ YES; (Add 500 points to the above score and provide reason below)

Reason:

NEW SCORE : 60

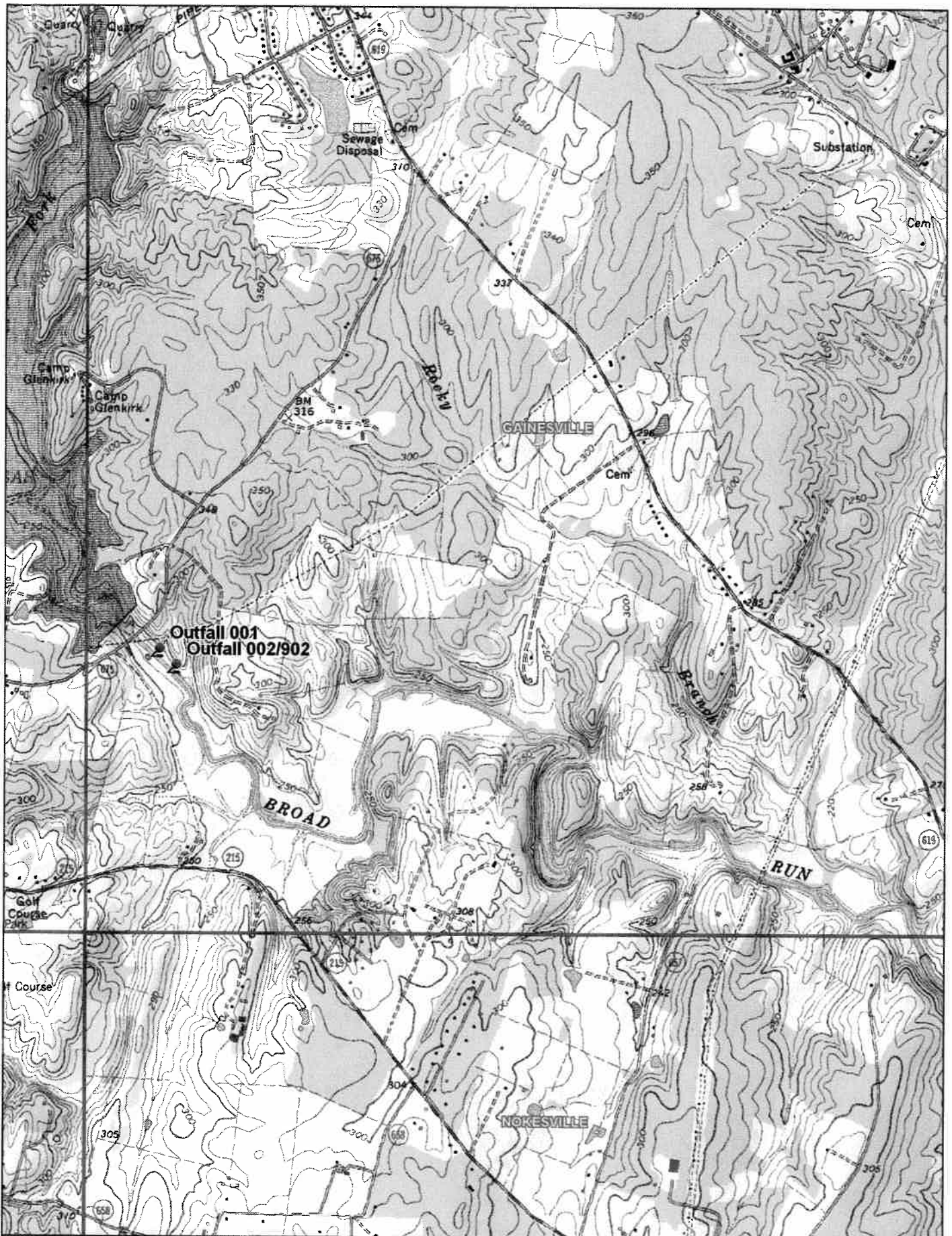
OLD SCORE : 60

Permit Reviewer's Name : Susan Mackert
 Phone Number: (703) 583-3853
 Date: February 8, 2011



* SPARES: UNLIKELY TO BE USED

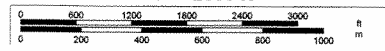
Water Treatment Plant Process Schematic



DELOME

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www.delorme.com

Scale 1 : 25,000
1" = 2080 ft



The facilities listed below either discharge to or are located within the waterbody VAN-A19R, and discharge to a receiving stream other than Broad Run or an unnamed tributary to Broad Run.

| | |
|-----------|--|
| VA0020460 | Vint Hill Farms Station WWTP (Kettle Run) |
| VA0085901 | IBM Corporation (Cannon Branch) |
| VA0087700 | Atlantic Research Corporation (Rocky Branch, UT) |
| VAG406009 | Charles M. Carrington Residence (Lick Run) |
| VAG406040 | Howard Wright Residence (Little Bull Run, UT) |
| VAG406065 | Richard Katsaris Residence (Catharpin Creek, UT) |
| VAG406076 | Michael W. Tinder, Sr. Residence (Catharpin Creek, UT) |
| VAG406134 | Virginia Gateway Auto Plaza (South Run, UT) |
| VAG406162 | Jackie L. Darne Residence (Chestnut Lick, UT) |
| VAG406165 | Bobby Neal Residence (Little Bull Run, UT) |
| VAG406221 | 7-Eleven #20412 (Chestnut Lick, UT) |
| VAG406224 | Gary Harris Residence (Little Bull Run) |
| VAG406233 | PWCPS – Transportation Area (Kettle Run, UT) |
| VAG406236 | John Gmitter Residence (Black Branch, UT) |
| VAG406247 | Emery E. Childers Residence (Chestnut Lick, UT) |
| VAG406269 | Teresa Robinson Residence (Cedar Run, UT) |
| VAG406270 | Johanna Devon Residence (Chestnut Lick, UT) |
| VAG406271 | Megan Judge Residence (Kettle Run) |
| VAG406292 | Robert Glasgow Residence (Kettle Run, UT) |
| VAG406333 | David Rupp Residence (Kettle Run, UT) |
| VAG406420 | Veronica Gaona Residence (Kettle Run, UT) |
| VAG406427 | Richard Wallace Residence (Slate Run, UT) |
| VAG406431 | Constance Capone Residence (Kettle Run, UT) |
| VAG406447 | Brian Sandberg Residence (Kettle Run, UT) |
| VAG406472 | Stephen Elmore Residence (Kettle Run, UT) |
| VAG750167 | Suds of Gainesville, LLC (Rocky Branch) |
| VAG840075 | Glen Gery Corporation (Cannon Branch, UT) |
| VAG840092 | Vulcan Construction Materials - Manassas (Cannon Branch, UT) |
| VAG110312 | Betco Supreme Incorporated (Dawkins Branch) |
| VAR050859 | Glen Gery Corporation – Manassas Quarry (Cannon Branch, UT) |
| VAR050901 | Superior Paving Corporation – Manassas Plant (Cannon Branch) |
| VAR050907 | Micron Technology Incorporated (Cannon Branch, UT) |
| VAR050908 | Branscome Paving Company - Manassas (Dawkins Branch, UT) |

| | |
|-----------|--|
| VAR050985 | Manassas Regional Airport (Cannon Branch) |
| VAR051030 | UPS Freight - Bristow (Rocky Branch, UT) |
| VAR051043 | Lockheed Martin - Manassas (Cannon Branch, UT) |
| VAR051094 | Norfolk Southern Railway – Manassas Yard (Cannon Branch, UT) |
| VAR051117 | Alliant Atlantic Food Service (Dawkins Branch, UT) |
| VAR051294 | FedEx Freight East Incorporated (Cannon Branch) |
| VAR051298 | Sam’s Junk Recycle Scrap and Materials Services (North Fork) |
| VAR051526 | Flightworks Incorporated (Cannon Branch) |
| VAR051646 | FedEx National LTL Incorporated (Cannon Branch, UT) |
| VAR051911 | Asphalt Emulsion Incorporated (Cannon Branch, UT) |
| VAR051919 | Chantilly Air (Cannon Branch) |

DESCRIPTION OF SIGNIFICANT MATERIALS
FORM 2F, SECTION IVB
MANASSAS WATER TREATMENT PLANT

Storm water drains located throughout the property all lead to the storm water management basin located on the southeastern corner of the property. This system discharges storm water through a valved conveyance, currently identified as Outfall 002. This outfall discharges to Broad Run located east of the property beyond the property line.

Activities that are exposed to storm water include: tank fueling operations, container and material storage, and chemical unloading areas. All other activities and storage containers are located inside and do not pose a risk to storm water. This facility has no storm water discharges to any municipal conveyances. There is no discharge of floating solids or visible foam in other than trace amounts.

| Material | Container | Location | BMP |
|-----------------------|--------------------------|---------------------------------------|---|
| Diesel | 5,000 gallon tank | East of Clearwell | On concrete, double-walled |
| Ammonia | 8,000 gallon tank | South of the Clarifier Building | Outdoors, on concrete pad, bermed |
| Hypofluosilicic Acid | 6,000 gallon tank | South of the Clarifier Building | Outdoors, on concrete, bermed |
| Sodium Hypochlorite | 10,000 gallon tank | East of Filter Building | Outdoors, on concrete, bermed |
| Sodium Hypochlorite | Loading/Unloading ports | Eastside of Filter/Clarifier Building | Concrete spill basin located below the fill port |
| Ferric Sulfate | Loading/Unloading ports | Eastside of Chemical Storage Building | Concrete spill basin located below the fill port |
| Caustic Soda | Loading/Unloading ports | Eastside of Chemical Storage Building | Concrete spill basin located below the fill port |
| Sodium Permanganate* | Loading/Unloading ports | Eastside of Chemical Storage Building | Concrete spill basin located below the fill port |
| Polyaluminum Chloride | Loading/Unloading ports | Eastside of Chemical Storage Building | Concrete spill basin located below the fill port |
| Phosphate | 50 pound bags | Pulsator Building dock | Wrapped in cellophane on pallets (spill kit available) |
| Polymer | 50 pound bags | Unloading dock near Operator Building | Wrapped in cellophane on pallets (spill kit available) |
| Earthtec | 275 gallon totes | Unloading dock near Operator Building | Storm drain covered while unloading (spill kit available) |
| Carbon | 200,000 dry tons in silo | South of Chemical Storage Building | Temporary storm drain cover |

*Will be used on site by the end of 2011

MEMORANDUM
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
NORTHERN REGIONAL OFFICE

13901 Crown Court

Woodbridge, VA 22193

SUBJECT: Manassas Water Treatment Plant (VA0050181)

TO: Reissuance File

FROM: Susan Mackert

DATE: September 30, 2010

A site visit was conducted on September 16, 2010, in support of the permit reissuance for the aforementioned facility. Application packages were received on October 5, 2010, and November 2, 2010, and the site visit confirms that the applications received are accurate and representative of actual site conditions.

No changes were noted with respect to Outfall 001 (photos 1 – 3). This outfall remains the primary discharge point from the facility for industrial wastewater. Discharge is intermittent in nature occurring three times per week for four hours at a time.

With this reissuance, Outfall 002 has been added to the permit and designated as an industrial wastewater / comingled storm water overflow. Under typical conditions this outfall does not discharge. However, there are industrial processes within the drainage area of the outfall (photos 4 – 5). Should there be an operational problem and/or failure within the drainage area industrial process water would flow to the retention pond (photo 6) and overflow towards Broad Run (photos 7 -8). As such, there is reasonable potential for an industrial wastewater and/or co-mingled storm water discharge from the retention pond.

A discrete storm water discharge would only occur when the retention pond overflows (photos 6 – 8) due to a significant rain event. With this reissuance, Outfall 902 has been added to the permit and designated as an emergency storm water overflow.



Photo 1. Outfall 001.



Photo 2. Upstream of Outfall 001.



Photo 3. Downstream of Outfall 001.



Photo 4. Industrial processes that could impact storm water retention pond shown in Photo 6.



Photo 5. Industrial processes that could impact storm water retention pond shown in Photo 6.



Photo 6. Storm water retention pond.



Photo 7. Overflow location of storm water retention pond shown in Photo 6.



Photo 8. Overflow from storm water retention pond would flow across grassy area shown in photo and enter Broad Run. The arrow indicates the location of Broad Run.

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Manassas WTP

Permit No.: VA0050181

Receiving Stream: Broad Run

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

| | |
|---|------------|
| Mean Hardness (as CaCO ₃) = | 76 mg/L |
| 90% Temperature (Annual) = | 23.9 deg C |
| 90% Temperature (Wet season) = | deg C |
| 90% Maximum pH = | 8 SU |
| 10% Maximum pH = | SU |
| Tier Designation (1 or 2) = | 1 |
| Public Water Supply (PWS) Y/N? = | n |
| Trout Present Y/N? = | n |
| Early Life Stages Present Y/N? = | y |

Stream Flows

| | |
|---------------------|-------|
| 1Q10 (Annual) = | 0 MGD |
| 7Q10 (Annual) = | 0 MGD |
| 3Q10 (Annual) = | 0 MGD |
| 1Q10 (Wet season) = | 0 MGD |
| 3Q10 (Wet season) = | 0 MGD |
| 3Q05 = | 0 MGD |
| Harmonic Mean = | 0 MGD |

Mixing Information

| | |
|-------------------------|-------|
| Annual - 1Q10 Mix = | 100 % |
| - 7Q10 Mix = | 100 % |
| - 3Q10 Mix = | 100 % |
| Wet Season - 1Q10 Mix = | 100 % |
| - 3Q10 Mix = | 100 % |

Effluent Information

| | |
|---|----------|
| Mean Hardness (as CaCO ₃) = | 50 mg/L |
| 90% Temp (Annual) = | 25 deg C |
| 90% Temp (Wet season) = | deg C |
| 90% Maximum pH = | 7.14 SU |
| 10% Maximum pH = | SU |
| Discharge Flow = | 1 MGD |

| Parameter (ug/l unless noted) | Background Conc. | Water Quality Criteria | | | | Wasteload Allocations | | | | Antidegradation Baseline | | | | Antidegradation Allocations | | | | Most Limiting Allocations | | | | |
|---|---------------------|------------------------|----------|----------|---------|-----------------------|---------|----------|---------|--------------------------|---------|----------|----|-----------------------------|---------|----------|----|---------------------------|---------|----------|----|---------|
| | | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | |
| Acephenanthrene | 0 | -- | -- | na | 9.9E+02 | -- | -- | na | 9.9E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 9.9E+02 |
| Acrolien | 0 | -- | -- | na | 9.3E+00 | -- | -- | na | 9.3E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 9.3E+00 |
| Acrylonitrile ^c | 0 | -- | -- | na | 2.5E+00 | -- | -- | na | 2.5E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.5E+00 |
| Aldrin ^c | 0 | 3.0E+00 | -- | na | 5.0E-04 | 3.0E+00 | -- | na | 5.0E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 5.0E-04 |
| Ammonia-N (mg/l) (Yearly) | 0 | 3.15E+01 | 2.83E+00 | na | -- | 3.2E+01 | 2.8E+00 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Ammonia-N (mg/l) (High Flow) | 0 | 3.15E+01 | 5.56E+00 | na | -- | 3.2E+01 | 5.6E+00 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Anthracene | 0 | -- | -- | na | 4.0E+04 | -- | -- | na | 4.0E+04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 4.0E+04 |
| Antimony | 0 | -- | -- | na | 6.4E+02 | -- | -- | na | 6.4E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 6.4E+02 |
| Arsenic | 0 | 3.4E+02 | 1.5E+02 | na | -- | 3.4E+02 | 1.5E+02 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Barium | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Benzene ^c | 0 | -- | -- | na | 5.1E+02 | -- | -- | na | 5.1E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 5.1E+02 |
| Benzidine ^c | 0 | -- | -- | na | 2.0E-03 | -- | -- | na | 2.0E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.0E-03 |
| Benzo (a) anthracene ^c | 0 | -- | -- | na | 1.8E-01 | -- | -- | na | 1.8E-01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.8E-01 |
| Benzo (b) fluoranthene ^c | 0 | -- | -- | na | 1.8E-01 | -- | -- | na | 1.8E-01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.8E-01 |
| Benzo (k) fluoranthene ^c | 0 | -- | -- | na | 1.8E-01 | -- | -- | na | 1.8E-01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.8E-01 |
| Benzo (a) pyrene ^c | 0 | -- | -- | na | 1.8E-01 | -- | -- | na | 1.8E-01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.8E-01 |
| Bis2-Chloroethyl Ether ^c | 0 | -- | -- | na | 5.3E+00 | -- | -- | na | 5.3E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 5.3E+00 |
| Bis2-Chloroisopropyl Ether | 0 | -- | -- | na | 6.5E+04 | -- | -- | na | 6.5E+04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 6.5E+04 |
| Bis 2-Ethylhexyl Phthalate ^c | 0 | -- | -- | na | 2.2E+01 | -- | -- | na | 2.2E+01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.2E+01 |
| Bromoform ^c | 0 | -- | -- | na | 1.4E+03 | -- | -- | na | 1.4E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.4E+03 |
| Butylbenzylphthalate | 0 | -- | -- | na | 1.9E+03 | -- | -- | na | 1.9E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.9E+03 |
| Cadmium | 0 | 1.8E+00 | 6.6E-01 | na | -- | 1.8E+00 | 6.6E-01 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Carbon Tetrachloride ^c | 0 | -- | -- | na | 1.6E+01 | -- | -- | na | 1.6E+01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.6E+01 |
| Chlordane ^c | 0 | 2.4E+00 | 4.3E-03 | na | 8.1E-03 | 2.4E+00 | 4.3E-03 | na | 8.1E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 8.1E-03 |
| Chloride | 0 | 8.6E+05 | 2.3E+05 | na | -- | 8.6E+05 | 2.3E+05 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| TRC | 0 | 1.9E+01 | 1.1E+01 | na | -- | 1.9E+01 | 1.1E+01 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Chlorobenzene | 0 | -- | -- | na | 1.6E+03 | -- | -- | na | 1.6E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.6E+03 |

| Parameter (µg/l unless noted) | Background Conc. | Water Quality Criteria | | | | Wasteload Allocations | | | | Antidegradation Baseline | | | | Antidegradation Allocations | | | | Most Limiting Allocations | | | | |
|---|---------------------|------------------------|---------|----------|---------|-----------------------|---------|----------|---------|--------------------------|---------|----------|----|-----------------------------|---------|----------|----|---------------------------|---------|----------|----|---------|
| | | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | |
| Chlorobromomethane ^c | 0 | -- | -- | na | 1.3E+02 | -- | -- | na | 1.3E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.3E+02 |
| Chloroform | 0 | -- | -- | na | 1.1E+04 | -- | -- | na | 1.1E+04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.1E+04 |
| 2-Chloronaphthalene | 0 | -- | -- | na | 1.6E+03 | -- | -- | na | 1.6E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.6E+03 |
| 2-Chlorophenol | 0 | -- | -- | na | 1.5E+02 | -- | -- | na | 1.5E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.5E+02 |
| Chlorpyrifos | 0 | 8.3E-02 | 4.1E-02 | na | -- | 8.3E-02 | 4.1E-02 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Chromium III | 0 | 3.2E+02 | 4.2E+01 | na | -- | 3.2E+02 | 4.2E+01 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Chromium VI | 0 | 1.6E+01 | 1.1E+01 | na | -- | 1.6E+01 | 1.1E+01 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Chromium, Total | 0 | -- | -- | 1.0E+02 | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Chrysene ^c | 0 | -- | -- | na | 1.8E-02 | -- | -- | na | 1.8E-02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.8E-02 |
| Copper | 0 | 7.0E+00 | 5.0E+00 | na | -- | 7.0E+00 | 5.0E+00 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Cyanide, Free | 0 | 2.2E+01 | 5.2E+00 | na | 1.6E+04 | 2.2E+01 | 5.2E+00 | na | 1.6E+04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.6E+04 |
| DDD ^c | 0 | -- | -- | na | 3.1E-03 | -- | -- | na | 3.1E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 3.1E-03 |
| DDE ^c | 0 | -- | -- | na | 2.2E-03 | -- | -- | na | 2.2E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.2E-03 |
| DDT ^c | 0 | 1.1E+00 | 1.0E-03 | na | 2.2E-03 | 1.1E+00 | 1.0E-03 | na | 2.2E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.2E-03 |
| Demeton | 0 | -- | 1.0E-01 | na | -- | -- | 1.0E-01 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Diazinon | 0 | 1.7E-01 | 1.7E-01 | na | -- | 1.7E-01 | 1.7E-01 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Dibenz(a,h)anthracene ^c | 0 | -- | -- | na | 1.8E-01 | -- | -- | na | 1.8E-01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.8E-01 |
| 1,2-Dichlorobenzene | 0 | -- | -- | na | 1.3E+03 | -- | -- | na | 1.3E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.3E+03 |
| 1,3-Dichlorobenzene | 0 | -- | -- | na | 9.6E+02 | -- | -- | na | 9.6E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 9.6E+02 |
| 1,4-Dichlorobenzene | 0 | -- | -- | na | 1.9E+02 | -- | -- | na | 1.9E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.9E+02 |
| 3,3-Dichlorobenzidine ^c | 0 | -- | -- | na | 2.8E-01 | -- | -- | na | 2.8E-01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.8E-01 |
| Dichlorobromomethane ^c | 0 | -- | -- | na | 1.7E+02 | -- | -- | na | 1.7E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.7E+02 |
| 1,2-Dichloroethane ^c | 0 | -- | -- | na | 3.7E+02 | -- | -- | na | 3.7E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 3.7E+02 |
| 1,1-Dichloroethylene | 0 | -- | -- | na | 7.1E+03 | -- | -- | na | 7.1E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 7.1E+03 |
| 1,2-trans-dichloroethylene | 0 | -- | -- | na | 1.0E+04 | -- | -- | na | 1.0E+04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.0E+04 |
| 2,4-Dichlorophenol | 0 | -- | -- | na | 2.9E+02 | -- | -- | na | 2.9E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.9E+02 |
| 2,4-Dichlorophenoxy acetic acid (2,4-D) | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| 1,2-Dichloropropane ^c | 0 | -- | -- | na | 1.5E+02 | -- | -- | na | 1.5E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.5E+02 |
| 1,3-Dichloropropane ^c | 0 | -- | -- | na | 2.1E+02 | -- | -- | na | 2.1E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.1E+02 |
| Dieldrin ^c | 0 | 2.4E-01 | 5.6E-02 | na | 5.4E-04 | 2.4E-01 | 5.6E-02 | na | 5.4E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 5.4E-04 |
| Diethyl Phthalate | 0 | -- | -- | na | 4.4E+04 | -- | -- | na | 4.4E+04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 4.4E+04 |
| 2,4-Dimethylphenol | 0 | -- | -- | na | 8.5E+02 | -- | -- | na | 8.5E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 8.5E+02 |
| Dimethyl Phthalate | 0 | -- | -- | na | 1.1E+06 | -- | -- | na | 1.1E+06 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.1E+06 |
| Di-n-Butyl Phthalate | 0 | -- | -- | na | 4.5E+03 | -- | -- | na | 4.5E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 4.5E+03 |
| 2,4-Dinitrophenol | 0 | -- | -- | na | 5.3E+03 | -- | -- | na | 5.3E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 5.3E+03 |
| 2-Methyl-4,6-Dinitrophenol | 0 | -- | -- | na | 2.8E+02 | -- | -- | na | 2.8E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.8E+02 |
| 2,4-Dinitrofluorene ^c | 0 | -- | -- | na | 3.4E+01 | -- | -- | na | 3.4E+01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 3.4E+01 |
| tetrachlorodibenzo-p-dioxin | 0 | -- | -- | na | 5.1E-08 | -- | -- | na | 5.1E-08 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 5.1E-08 |
| 1,2-Diphenylhydrazine ^c | 0 | -- | -- | na | 2.0E+00 | -- | -- | na | 2.0E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.0E+00 |
| Alpha-Endosulfan | 0 | 2.2E-01 | 5.6E-02 | na | 8.9E+01 | 2.2E-01 | 5.6E-02 | na | 8.9E+01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 8.9E+01 |
| Beta-Endosulfan | 0 | 2.2E-01 | 5.6E-02 | na | 8.9E+01 | 2.2E-01 | 5.6E-02 | na | 8.9E+01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 8.9E+01 |
| Alpha + Beta Endosulfan | 0 | 2.2E-01 | 5.6E-02 | -- | -- | 2.2E-01 | 5.6E-02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Endosulfan Sulfate | 0 | -- | -- | na | 8.9E+01 | -- | -- | na | 8.9E+01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 8.9E+01 |
| Endrin | 0 | 8.6E-02 | 3.6E-02 | na | 6.0E-02 | 8.6E-02 | 3.6E-02 | na | 6.0E-02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 6.0E-02 |
| Endrin Aldehyde | 0 | -- | -- | na | 3.0E-01 | -- | -- | na | 3.0E-01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 3.0E-01 |

| Parameter (ug/l unless noted) | Background Conc. | Water Quality Criteria | | | | Wasteload Allocations | | | | Antidegradation Baseline | | | | Antidegradation Allocations | | | | Most Limiting Allocations | | | |
|--|---------------------|------------------------|---------|----------|---------|-----------------------|---------|----------|---------|--------------------------|---------|----------|----|-----------------------------|---------|----------|----|---------------------------|---------|----------|---------|
| | | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH |
| Ethylbenzene | 0 | -- | -- | na | 2.1E+03 | -- | -- | na | 2.1E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.1E+03 |
| Fluoranthene | 0 | -- | -- | na | 1.4E+02 | -- | -- | na | 1.4E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.4E+02 |
| Fluorene | 0 | -- | -- | na | 5.3E+03 | -- | -- | na | 5.3E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 5.3E+03 |
| Foaming Agents | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Guthion | 0 | -- | 1.0E-02 | na | -- | -- | 1.0E-02 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Heptachlor ° | 0 | 5.2E-01 | 3.8E-03 | na | 7.9E-04 | 5.2E-01 | 3.8E-03 | na | 7.9E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 7.9E-04 |
| Heptachlor Epoxide ° | 0 | 5.2E-01 | 3.8E-03 | na | 3.9E-04 | 5.2E-01 | 3.8E-03 | na | 3.9E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 3.9E-04 |
| Hexachlorobenzene ° | 0 | -- | -- | na | 2.9E-03 | -- | -- | na | 2.9E-03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.9E-03 |
| Hexachloroduladene ° | 0 | -- | -- | na | 1.8E+02 | -- | -- | na | 1.8E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.8E+02 |
| Hexachlorocyclohexane | 0 | -- | -- | na | 4.9E-02 | -- | -- | na | 4.9E-02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 4.9E-02 |
| Alpha-BHC ° | 0 | -- | -- | na | 1.7E-01 | -- | -- | na | 1.7E-01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.7E-01 |
| Hexachlorocyclohexane Beta-BHC ° | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Hexachlorocyclopentadiene Gamma-BHC ° (lindane) | 0 | 9.5E-01 | na | na | 1.8E+00 | 9.5E-01 | -- | na | 1.8E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.8E+00 |
| Hexachloroethane ° | 0 | -- | -- | na | 1.1E+03 | -- | -- | na | 1.1E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.1E+03 |
| Hydrogen Sulfide | 0 | -- | 2.0E+00 | na | -- | -- | 2.0E+00 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 3.3E+01 |
| Indeno (1,2,3-cd) pyrene ° | 0 | -- | -- | na | 1.8E-01 | -- | -- | na | 1.8E-01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Iron | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.8E-01 |
| Isophorone ° | 0 | -- | -- | na | 9.6E+03 | -- | -- | na | 9.6E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Kepone | 0 | -- | 0.0E+00 | na | -- | -- | 0.0E+00 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 9.6E+03 |
| Lead | 0 | 4.9E+01 | 5.6E+00 | na | -- | 4.9E+01 | 5.6E+00 | na | -- | 4.9E+01 | 5.6E+00 | na | -- | 4.9E+01 | 5.6E+00 | na | -- | 4.9E+01 | 5.6E+00 | na | -- |
| Malathion | 0 | -- | 1.0E-01 | na | -- | -- | 1.0E-01 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Manganese | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Mercury | 0 | 1.4E+00 | 7.7E-01 | -- | -- | 1.4E+00 | 7.7E-01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Methyl Bromide | 0 | -- | -- | na | 1.5E+03 | -- | -- | na | 1.5E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.5E+03 |
| Methylene Chloride ° | 0 | -- | -- | na | 5.9E+03 | -- | -- | na | 5.9E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 5.9E+03 |
| Methoxychlor | 0 | -- | 3.0E-02 | na | -- | -- | 3.0E-02 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Mirex | 0 | -- | 0.0E+00 | na | -- | -- | 0.0E+00 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Nickel | 0 | 1.0E+02 | 1.1E+01 | na | 4.6E+03 | 1.0E+02 | 1.1E+01 | na | 4.6E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 4.6E+03 |
| Nitrate (as N) | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Nitrobenzene | 0 | -- | -- | na | 6.9E+02 | -- | -- | na | 6.9E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 6.9E+02 |
| N-Nitrosodimethylamine ° | 0 | -- | -- | na | 3.0E+01 | -- | -- | na | 3.0E+01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 3.0E+01 |
| N-Nitrosodiphenylamine ° | 0 | -- | -- | na | 6.0E+01 | -- | -- | na | 6.0E+01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 6.0E+01 |
| N-Nitrosodi-n-propylamine ° | 0 | -- | -- | na | 5.1E+00 | -- | -- | na | 5.1E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 5.1E+00 |
| Nonylphenol | 0 | 2.8E+01 | 6.6E+00 | -- | -- | 2.8E+01 | 6.6E+00 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Parathion | 0 | 6.5E-02 | 1.3E-02 | na | -- | 6.5E-02 | 1.3E-02 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| PCB Total ° | 0 | -- | 1.4E-02 | na | 6.4E-04 | -- | 1.4E-02 | na | 6.4E-04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 6.4E-04 |
| Pentachlorophenol ° | 0 | 7.7E-03 | 5.9E-03 | na | 3.0E+01 | 7.7E-03 | 5.9E-03 | na | 3.0E+01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 3.0E+01 |
| Phenol | 0 | -- | -- | na | 8.6E+05 | -- | -- | na | 8.6E+05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 8.6E+05 |
| Pyrene | 0 | -- | -- | na | 4.0E+03 | -- | -- | na | 4.0E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 4.0E+03 |
| Radionuclides | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Gross Alpha Activity (pCi/L) | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Beta and Photon Activity (mrem/yr) | 0 | -- | -- | na | 4.0E+00 | -- | -- | na | 4.0E+00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 4.0E+00 |
| Radium 226 + 228 (pCi/L) | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Uranium (ug/l) | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |

| Parameter (ug/l unless noted) | Background Conc. | Water Quality Criteria | | | | Wasteload Allocations | | | | Antidegradation Baseline | | | | Antidegradation Allocations | | | | Most Limiting Allocations | | | |
|--|---------------------|------------------------|---------|----------|---------|-----------------------|---------|----------|---------|--------------------------|---------|----------|----|-----------------------------|---------|----------|----|---------------------------|---------|----------|---------|
| | | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH | Acute | Chronic | HH (PWS) | HH |
| Selenium, Total Recoverable | 0 | 2.0E+01 | 5.0E+00 | na | 4.2E+03 | 2.0E+01 | 5.0E+00 | na | 4.2E+03 | -- | -- | -- | -- | -- | -- | -- | -- | 2.0E+01 | 5.0E+00 | na | 4.2E+03 |
| Silver | 0 | 1.0E+00 | -- | na | -- | 1.0E+00 | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.0E+00 | -- | na | -- |
| Sulfate | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| 1,1,2,2-Tetrachloroethane ^c | 0 | -- | -- | na | 4.0E+01 | -- | -- | na | 4.0E+01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 4.0E+01 |
| Tetrachloroethylene ^c | 0 | -- | -- | na | 3.3E+01 | -- | -- | na | 3.3E+01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 3.3E+01 |
| Thallium | 0 | -- | -- | na | 4.7E-01 | -- | -- | na | 4.7E-01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 4.7E-01 |
| Toluene | 0 | -- | -- | na | 6.0E+03 | -- | -- | na | 6.0E+03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 6.0E+03 |
| Total dissolved solids | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Toxaphene ^c | 0 | 7.3E-01 | 2.0E-04 | na | 2.8E-03 | 7.3E-01 | 2.0E-04 | na | 2.8E-03 | -- | -- | -- | -- | -- | -- | -- | -- | 7.3E-01 | 2.0E-04 | na | 2.8E-03 |
| Tributyltin | 0 | 4.6E-01 | 7.2E-02 | na | -- | 4.6E-01 | 7.2E-02 | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.6E-01 | 7.2E-02 | na | -- |
| 1,2,4-Trichlorobenzene | 0 | -- | -- | na | 7.0E+01 | -- | -- | na | 7.0E+01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 7.0E+01 |
| 1,1,2-Trichloroethane ^c | 0 | -- | -- | na | 1.6E+02 | -- | -- | na | 1.6E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 1.6E+02 |
| Trichloroethylene ^c | 0 | -- | -- | na | 3.0E+02 | -- | -- | na | 3.0E+02 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 3.0E+02 |
| 2,4,6-Trichlorophenol ^c | 0 | -- | -- | na | 2.4E+01 | -- | -- | na | 2.4E+01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | 2.4E+01 |
| 2-(2,4,5-Trichlorophenoxy)proionic acid (Silvex) | 0 | -- | -- | na | -- | -- | -- | na | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Vinyl Chloride ^c | 0 | -- | -- | na | 2.4E+01 | -- | -- | na | 2.4E+01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | na | -- |
| Zinc | 0 | 6.5E+01 | 6.5E+01 | na | 2.6E+04 | 6.5E+01 | 6.5E+01 | na | 2.6E+04 | -- | -- | -- | -- | -- | -- | -- | -- | 6.5E+01 | 6.5E+01 | na | 2.4E+01 |

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 20 maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
- Antidegradation WLAs are based upon a complete mix.
Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic, Armonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

| Metal | Target Value (SSTV) | Note: do not use QL's lower than the minimum QL's provided in agency guidance |
|--------------|---------------------|---|
| Antimony | 6.4E+02 | |
| Arsenic | 9.0E+01 | |
| Barium | na | |
| Cadmium | 3.9E-01 | |
| Chromium III | 2.5E+01 | |
| Chromium VI | 6.4E+00 | |
| Copper | 2.9E+00 | |
| Iron | na | |
| Lead | 3.4E+00 | |
| Manganese | na | |
| Mercury | 4.6E-01 | |
| Nickel | 6.8E+00 | |
| Selenium | 3.0E+00 | |
| Silver | 4.2E-01 | |
| Zinc | 2.6E+01 | |

1/26/2011 2:00:14 PM

Facility = Manassas WTP
Chemical = Chlorine
Chronic averaging period = 4
WLAa = 0.019
WLAc = 0.011
Q.L. = 0.1
samples/mo. = 1
samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = .2
Variance = .0144
C.V. = 0.6
97th percentile daily values = .486683
97th percentile 4 day average = .332758
97th percentile 30 day average = .241210
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 1.60883226245855E-02
Average Weekly limit = 1.60883226245855E-02
Average Monthly Limit = 1.60883226245855E-02

The data are:

0.2

3/1/2011 9:23:06 AM

Facility = Manassas Water Treatment Plant

Chemical = TBT

Chronic averaging period = 4

WLAa = 0.46

WLAc = 0.072

Q.L. = 0.03

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 14

Expected Value =

Variance =

C.V. =

97th percentile daily values =

97th percentile 4 day average =

97th percentile 30 day average=

< Q.L. = 14

Model used =

No Limit is required for this material

The data are:

0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0

DMR QA/QC

Permit #:VA0050181

[illegible]

DMR QA/QC

Permit #:VA0050181

[illegible]

DMR QA/QC

Permit #:VA0050181

Facility:Manassas City Water Treatment Plant

| Due | Outfall | Parameter | CONC MIN |
|-----------|---------|-----------|----------|
| 10-May-06 | 001 | PH | 6.49 |
| 10-Jun-06 | 001 | PH | 6.54 |
| 10-Aug-06 | 001 | PH | 6.54 |
| 10-Nov-06 | 001 | PH | 6.43 |
| 10-Feb-07 | 001 | PH | 6.77 |
| 10-May-07 | 001 | PH | 6.2 |
| 10-Aug-07 | 001 | PH | 6.6 |
| 10-Nov-07 | 001 | PH | 6.5 |
| 10-Feb-08 | 001 | PH | 6.5 |
| 10-May-08 | 001 | PH | X |
| 10-Aug-08 | 001 | PH | 6.22 |
| 10-Nov-08 | 001 | PH | 6.38 |
| 10-Feb-09 | 001 | PH | 6.9 |
| 10-May-09 | 001 | PH | 7.1 |
| 10-Aug-09 | 001 | PH | 7.3 |
| 10-Nov-09 | 001 | PH | 6.98 |
| 10-Feb-10 | 001 | PH | 7.5 |
| 10-May-10 | 001 | PH | 6.32 |
| 10-Aug-10 | 001 | PH | 6.29 |
| 10-Nov-10 | 001 | PH | 6.54 |

90% pH = 7.14

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated industrial wastewater and storm water into a water body in Prince William County, Virginia.

PUBLIC COMMENT PERIOD: March 8, 2011 to 5:00 p.m. on April 6, 2011

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Industrial wastewater and storm water issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: City of Manassas , 8500 Public Works Drive , Manassas , VA 20110, VA0050181

NAME AND ADDRESS OF FACILITY: Manassas Water Treatment Plant, 14329 Glenkirk Road, Nokesville, VA 20181. This facility is an Exemplary Environmental Enterprise participant in Virginia's Environmental Excellence Program.

PROJECT DESCRIPTION: The City of Manassas has applied for a reissuance of a permit for the public Manassas Water Treatment Plant. The applicant proposes to release treated industrial wastewater and storm water at a maximum rate of 1.0 million gallons per day into a water body. Solids from the treatment process will be transported to the Upper Occoquan Sewage Authority for disposal. The facility proposes to release the treated industrial wastewater and storm water in Broad Run in Prince William County in the Potomac River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, Total Suspended Solids , and Total Residual Chlorine. The permit will also require annual monitoring for Acute Toxicity using *P. promelas* and *C. dubia*.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the documents at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.

Name: Susan Mackert

Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193

Phone: (703) 583-3853 E-mail: susan.mackert@deq.virginia.gov Fax: (703) 583-3821

**State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review**

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

| | |
|----------------------|------------------|
| Facility Name: | Manassas WTP |
| NPDES Permit Number: | VA0050181 |
| Permit Writer Name: | Susan Mackert |
| Date: | February 8, 2011 |

Major []

Minor [x]

Industrial [x]

Municipal []

I.A. Draft Permit Package Submittal Includes:

| | Yes | No | N/A |
|---|-----|----|-----|
| 1. Permit Application? | X | | |
| 2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)? | X | | |
| 3. Copy of Public Notice? | X | | |
| 4. Complete Fact Sheet? | X | | |
| 5. A Priority Pollutant Screening to determine parameters of concern? | X | | |
| 6. A Reasonable Potential analysis showing calculated WQBELs? | X | | |
| 7. Dissolved Oxygen calculations? | | | X |
| 8. Whole Effluent Toxicity Test summary and analysis? | X | | |
| 9. Permit Rating Sheet for new or modified industrial facilities? | X | | |

I.B. Permit/Facility Characteristics

| | Yes | No | N/A |
|--|-----|----|-----|
| 1. Is this a new, or currently unpermitted facility? | | X | |
| 2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit? | X | | |
| 3. Does the fact sheet or permit contain a description of the wastewater treatment process? | X | | |
| 4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit? | | X | |
| 5. Has there been any change in streamflow characteristics since the last permit was developed? | | X | |
| 6. Does the permit allow the discharge of new or increased loadings of any pollutants? | X | | |
| 7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses? | X | | |
| 8. Does the facility discharge to a 303(d) listed water? | X | | |
| a. Has a TMDL been developed and approved by EPA for the impaired water? | X | | |
| b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit? | | | X |
| c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water? | | X | |
| 9. Have any limits been removed, or are any limits less stringent, than those in the current permit? | | X | |

| I.B. Permit/Facility Characteristics – cont. | Yes | No | N/A |
|---|------------|-----------|------------|
| 10. Does the permit authorize discharges of storm water? | X | | |
| 11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production? | | X | |
| 12. Are there any production-based, technology-based effluent limits in the permit? | | X | |
| 13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures? | | X | |
| 14. Are any WQBELs based on an interpretation of narrative criteria? | | X | |
| 15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations? | | X | |
| 16. Does the permit contain a compliance schedule for any limit or condition? | | X | |
| 17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)? | | X | |
| 18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated? | X | | |
| 19. Is there any indication that there is significant public interest in the permit action proposed for this facility? | | X | |
| 20. Have previous permit, application, and fact sheet been examined? | X | | |

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Review Checklist – For Non-Municipals

II.A. Permit Cover Page/Administration

| | Yes | No | N/A |
|--|-----|----|-----|
| 1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)? | X | | |
| 2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)? | X | | |

II.B. Effluent Limits – General Elements

| | Yes | No | N/A |
|--|-----|----|-----|
| 1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)? | X | | |
| 2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit? | X | | |

II.C. Technology-Based Effluent Limits (Effluent Guidelines & BPJ)

| | Yes | No | N/A |
|--|-----|----|-----|
| 1. Is the facility subject to a national effluent limitations guideline (ELG)? | | X | |
| a. If yes, does the record adequately document the categorization process, including an evaluation of whether the facility is a new source or an existing source? | | | X |
| b. If no, does the record indicate that a technology-based analysis based on Best Professional Judgement (BPJ) was used for all pollutants of concern discharged at treatable concentrations? | | X | |
| 2. For all limits developed based on BPJ, does the record indicate that the limits are consistent with the criteria established at 40 CFR 125.3(d)? | X | | |
| 3. Does the fact sheet adequately document the calculations used to develop both ELG and /or BPJ technology-based effluent limits? | X | | |
| 4. For all limits that are based on production or flow, does the record indicate that the calculations are based on a “reasonable measure of ACTUAL production” for the facility (not design)? | | | X |
| 5. Does the permit contain “tiered” limits that reflect projected increases in production or flow? | | X | |
| a. If yes, does the permit require the facility to notify the permitting authority when alternate levels of production or flow are attained? | | | X |
| 6. Are technology-based permit limits expressed in appropriate units of measure (e.g., concentration, mass, SU)? | | | X |
| 7. Are all technology-based limits expressed in terms of both maximum daily, weekly average, and/or monthly average limits? | | | X |
| 8. Are any final limits less stringent than required by applicable effluent limitations guidelines or BPJ? | | X | |

II.D. Water Quality-Based Effluent Limits

| | Yes | No | N/A |
|--|-----|----|-----|
| 1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality? | X | | |
| 2. Does the record indicate that any WQBELs were derived from a completed and EPA approved TMDL? | | X | |
| 3. Does the fact sheet provide effluent characteristics for each outfall? | X | | |
| 4. Does the fact sheet document that a “reasonable potential” evaluation was performed? | X | | |
| a. If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures? | X | | |
| b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone? | X | | |

II.D. Water Quality-Based Effluent Limits – cont.

| | Yes | No | N/A |
|--|-----|----|-----|
| c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”? | X | | |
| d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations where data are available)? | | X | |
| e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined? | X | | |
| 5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet? | X | | |
| 6. For all final WQBELs, are BOTH long-term (e.g., average monthly) AND short-term (e.g., maximum daily, weekly average, instantaneous) effluent limits established? | X | | |
| 7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)? | X | | |
| 8. Does the fact sheet indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy? | X | | |

II.E. Monitoring and Reporting Requirements

| | Yes | No | N/A |
|--|-----|----|-----|
| 1. Does the permit require at least annual monitoring for all limited parameters? | X | | |
| a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver? | | | X |
| 2. Does the permit identify the physical location where monitoring is to be performed for each outfall? | X | | |
| 3. Does the permit require testing for Whole Effluent Toxicity in accordance with the State’s standard practices? | X | | |

II.F. Special Conditions

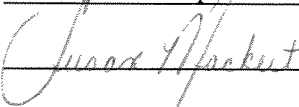
| | Yes | No | N/A |
|---|-----|----|-----|
| 1. Does the permit require development and implementation of a Best Management Practices (BMP) plan or site-specific BMPs? | | X | |
| a. If yes, does the permit adequately incorporate and require compliance with the BMPs? | | | X |
| 2. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements? | | | X |
| 3. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations? | X | | |

II.G. Standard Conditions

| | Yes | No | N/A |
|--|-----|----|-----|
| 1. Does the permit contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions? | X | | |
| List of Standard Conditions – 40 CFR 122.41 <div style="display: flex; justify-content: space-between;"> <div> Duty to comply Duty to reapply Need to halt or reduce activity not a defense Duty to mitigate Proper O & M Permit actions </div> <div> Property rights Duty to provide information Inspections and entry Monitoring and records Signatory requirement Bypass Upset </div> <div> Reporting Requirements Planned change Anticipated noncompliance Transfers Monitoring reports Compliance schedules 24-Hour reporting Other non-compliance </div> </div> | | | |
| 2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for existing non-municipal dischargers regarding pollutant notification levels [40 CFR 122.42(a)]? | X | | |

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

| | |
|-----------|--|
| Name | <u>Susan Mackert</u> |
| Title | <u>Environmental Specialist II Senior</u> |
| Signature | <u></u> |
| Date | <u>February 8, 2011</u> |